Abstract of the Invention

System and method for optimization of a design associated with a response function, using a hybrid neural net and support vector machine (NN/SVM) analysis to minimize or maximize an objective function, optionally subject to one or more constraints. As a first example, the NN/SVM analysis is applied iteratively to design of an aerodynamic component, such as an airfoil shape, where the objective function measures deviation from a target pressure distribution on the perimeter of the aerodynamic component. As a second example, the NN/SVM analysis is applied to data classification of a sequence of data points in a multidimensional space. The NN/SVM analysis is also applied to data regression.